

*Action: Update the MIL-STD-188-220B Robust Communications Protocol procedures in Appendix J so that they clearly describe the implementation in the Improved Data Modem. For example, J.3.4.3 should clarify that the segment count field in the last RCP packet shall have the end-of-frame flag set and should point to the first fill data segment transmitted. (SCC issue 1#)*

J.3.4.3 Multi-dwell segment count field. The segment counter is a modulo 64 count of the first segment in the packet. The six required bits shall be encoded as 1, 3, or 5 BCH (15,7) codewords depending on bits 2, 3 and 4 of the robust frame format. The six-bit segment counter shall occupy the 6 least significant bits of the seven-bit BCH data field. The most significant bit of the data field shall be used as an end of frame flag which, when set, indicates that data transmission is complete. A multi-dwell packet marked with an end of frame flag shall contain only the SOP pattern and the segment count field used to make the segment number of the ~~last nonfirst~~-fill data segment transmitted in the previous ~~previous~~ packet. If no fill data is included in the previous segment, the segment count field will point to the last segment data plus one.

J.3.4.6 Multi-dwell transmit processing. Data received from the data link layer for transmission shall be broken into 64 bit segments for transmission. The data shall be packetized as stated in J.3.4.1. Packets shall be transmitted consecutively with the packet count subfield containing the count, modulo 64, of the first segment in the packet until a communications link outage is detected, at which time, the remainder of the data segments in the currently transmitted packet shall be filled with an alternating one/zero pattern. If the configurable hop recovery time (HRT), is greater than the time remaining to complete the transmission of the current packet, the alternating one/zero sequence shall be extended to the end of the HRT period. If a hop is detected during the multi-dwell ~~packet-synchronization-field~~header, or during the transmission of the first two segments, the entire packet shall be retransmitted. The first multi-dwell packet transmitted in a frame shall not contain the multi-dwell synchronization field. It is assumed that the segment count of the first packet is zero.

The SOP and the segment counter shall not be transmitted during a possible frequency hop. The implementation shall develop an algorithm to establish when possible frequency hops may occur.

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J.3.4.6.3 Termination of transmission. After the final packet of the frame is transmitted, without a hop detected during a data segment containing actual data (not fill data), data transmission shall be terminated. To prevent receive delays caused by the receiver not being able to determine that the last data segment has been received, ~~an optional~~ truncated multi-dwell packet shall be sent with the end of frame flag set. The segment count associated with the end of frame flag shall mark the first ~~non~~-fill data segment transmitted. If no fill data is included in the previous segment, the segment count field will point to the last segment data plus one. Figure J-X depicts two examples of the last packet transmitted. In the first case, only three segments are included in the last frame of data (segments 100, 101, and 102) with the first segment being segment number 100. In this scenario, the segment header following the last frame to contain data will have the “last frame flag” bit set, and the segment counter will point to segment 103. In the second example, all the segments in the frame contain data (segment 100 through 105). The segment header following the last frame containing data will have the “last frame flag” bit set and the segment counter will point to segment 106. Note: In both examples TP timer shall recalculated based upon reception of the last bit of the segment counter of the truncated multi-dwell packet.

In the drawing the location of the “end of frame flag” gives the impression that is the msb of the segment counter is transmitted first; the end of frame flag. Please reverse the order of the bits in the segment counter in the truncated multi-dwell packet. Examples:

